

NASA Airborne  
Topographic Mapper  
2004 AASI Campaign



# AASI Campaign

## Activities and Obstacles:

NASA P-3 Broken

NRL P-3 Arranged

ATM- Sensor Would Not Fit into Port

Required ATM-4 to be Deployed for the First Time

NRL Regulation Required ATM-4 Transceiver and Rack to be  
Rebuilt

All Aluminum had to be Anodized

Hardware Disassembled and the Reassembled

Used Heavier Substrate on ATM-4 Folding Mirror

Checkout Flight Delayed

ATM Could Not Be Focused on Ground Target

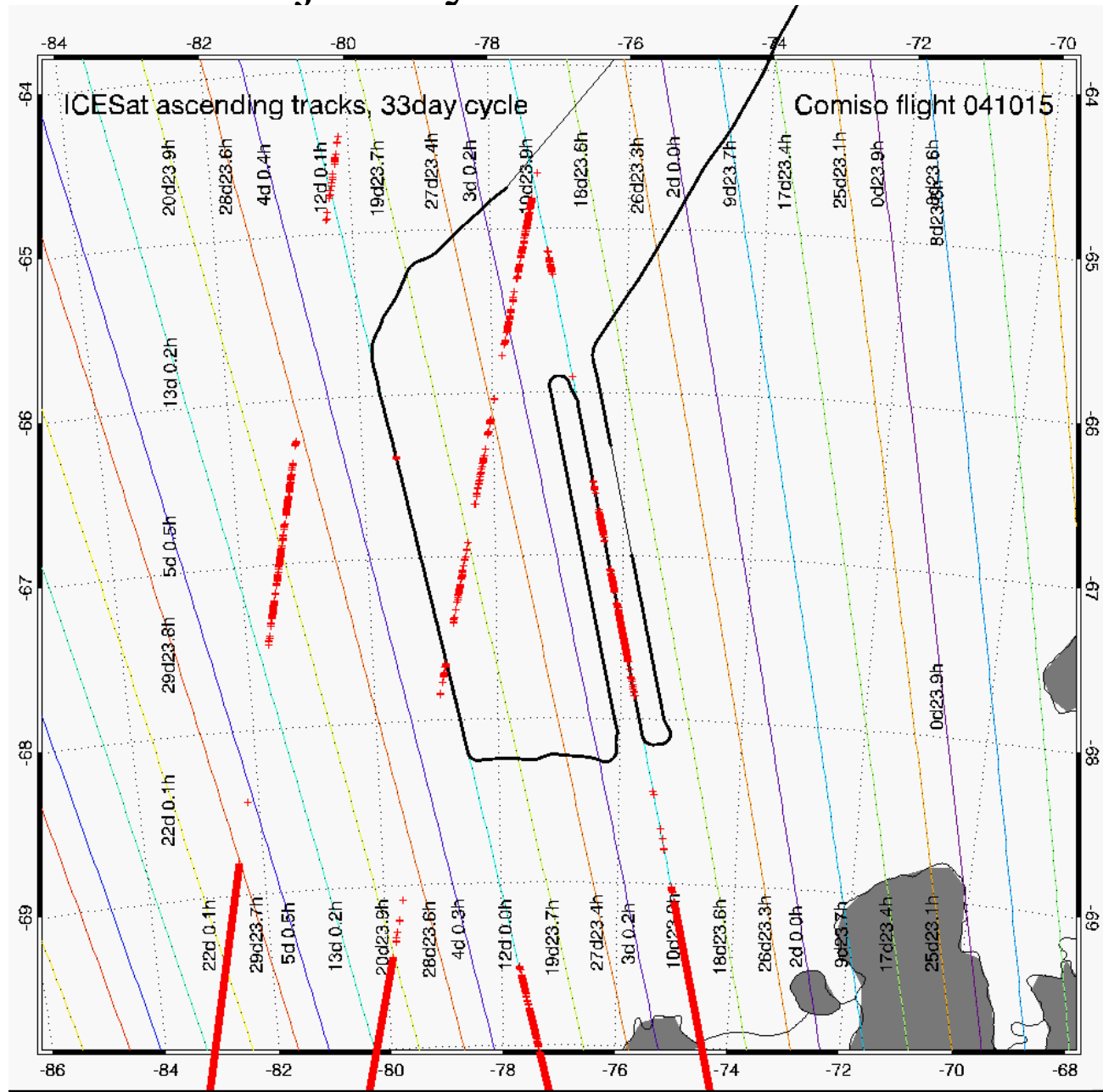
Did Not Get Data on Checkout Flight

# AASI Campaign

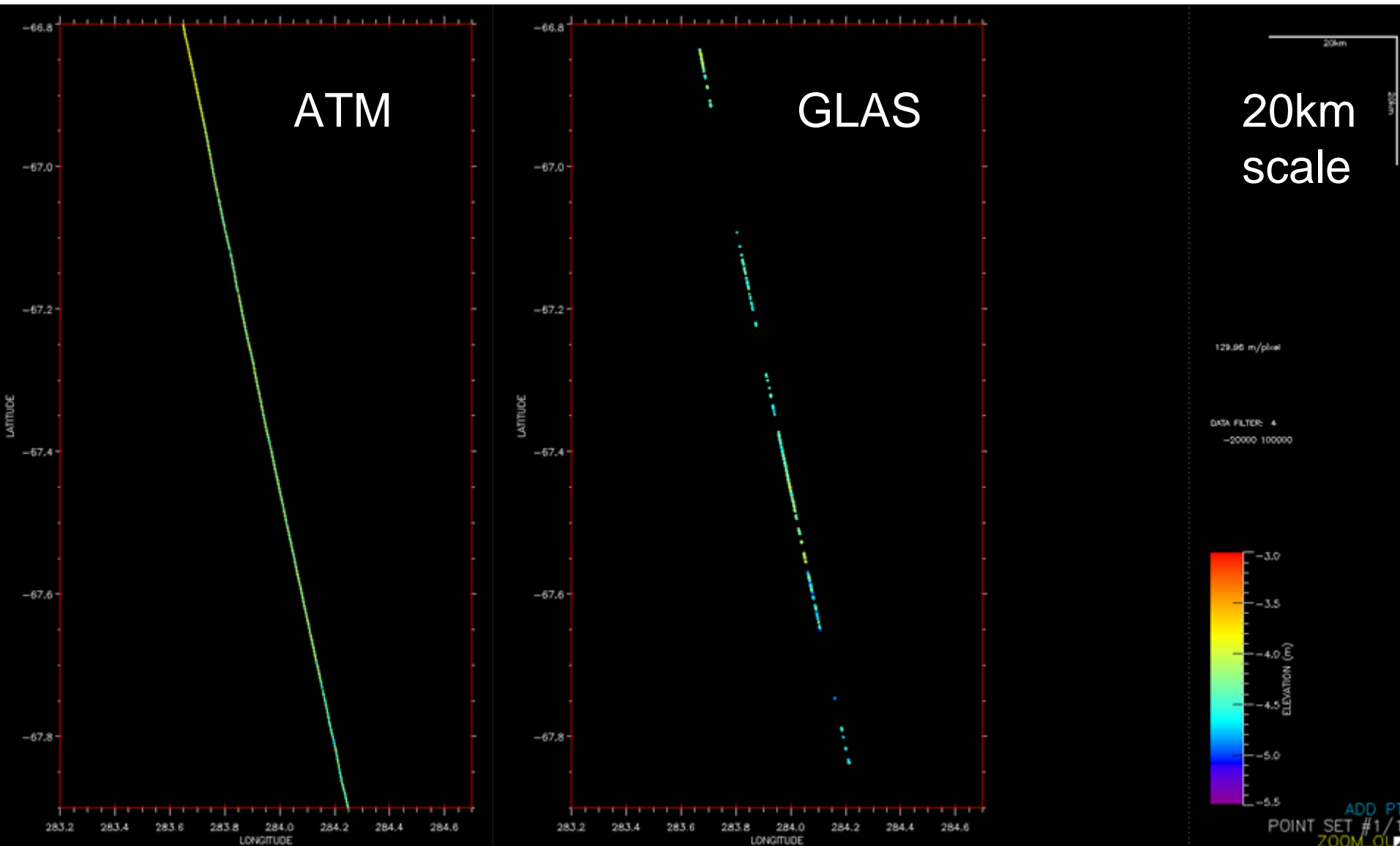
## Activities and Obstacles:

- Initial Mission
  - ATM Was Not Completely Functional
  - Acquired Supporting GPS and INS Data
  - Bad Connection in Wiring to GPS Power Supply
  - Intermittent Failure of GPS Power Supply and Data Gaps
- Ground Engineering
  - Acquired Bathroom Mirror
  - Aligned ATM-4 Transceiver
- Second Mission
  - Weather Not Great in Terms of Cloud Cover
  - Failure of PSR
  - Election of Low Altitude Mission
  - Luck with Cloud Cover
- Third Mission
  - GPS and INS Support

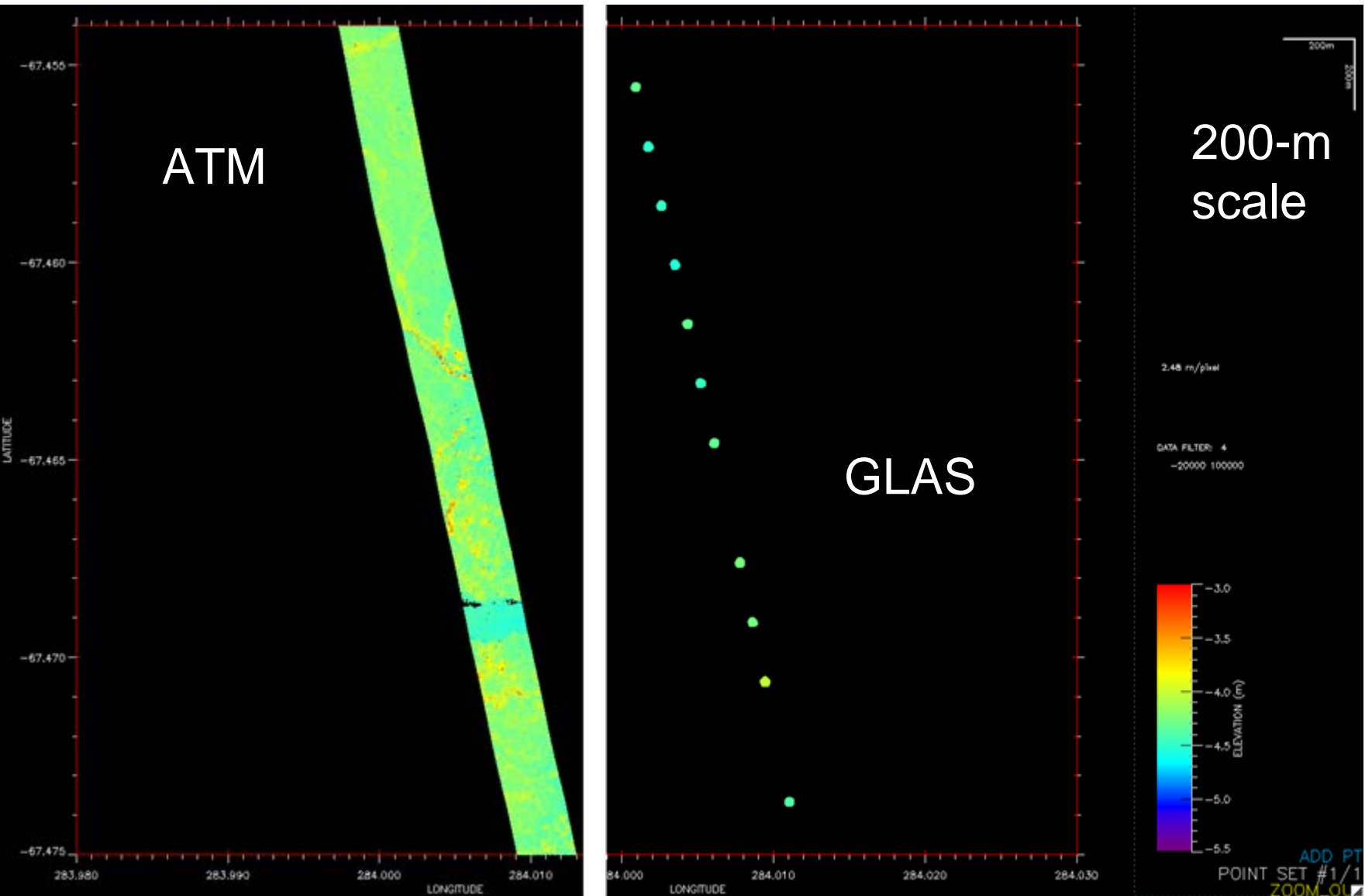
2004-10-15 trajectory with 10-14&15 GLAS data



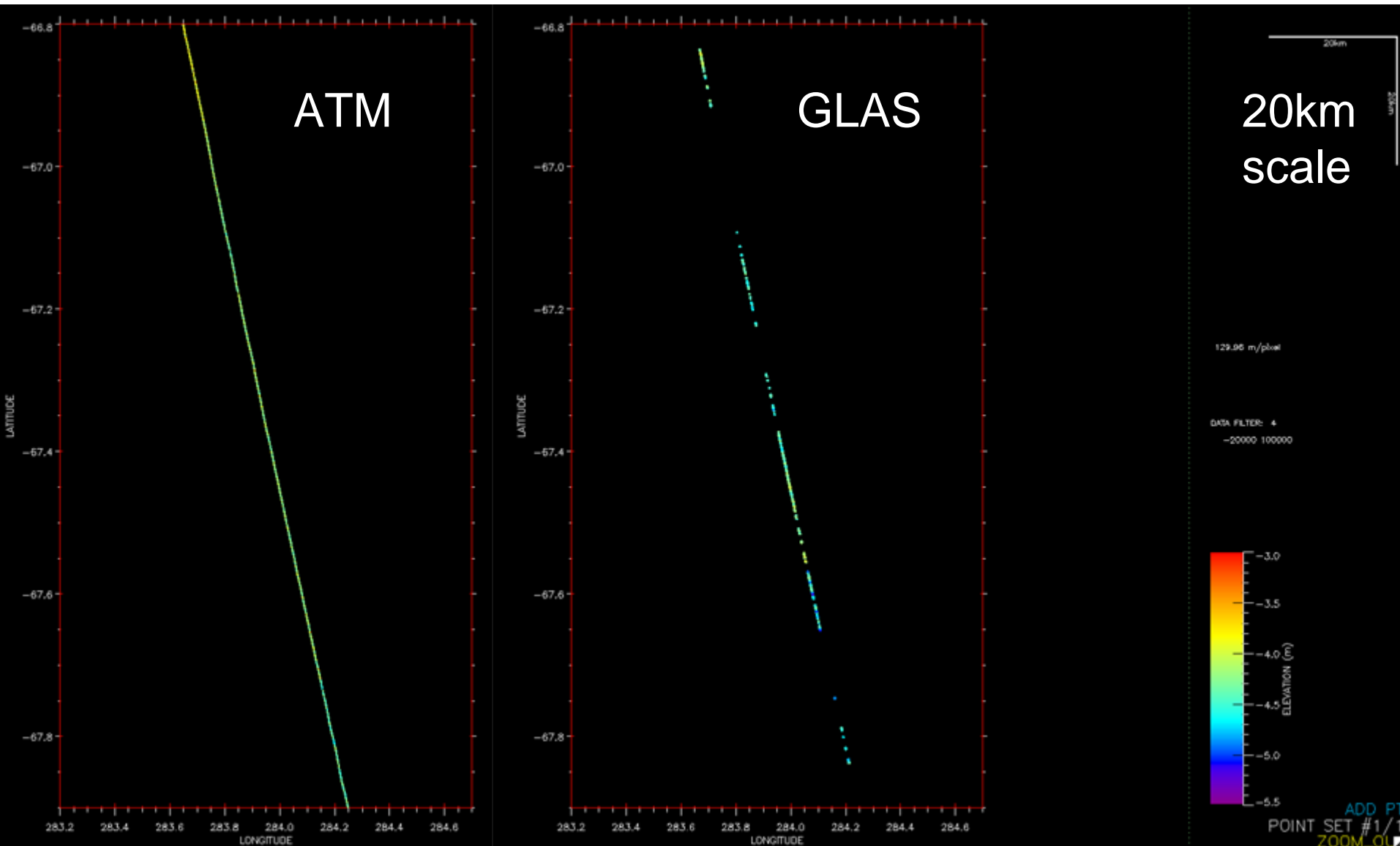
# ATM and GLAS maps



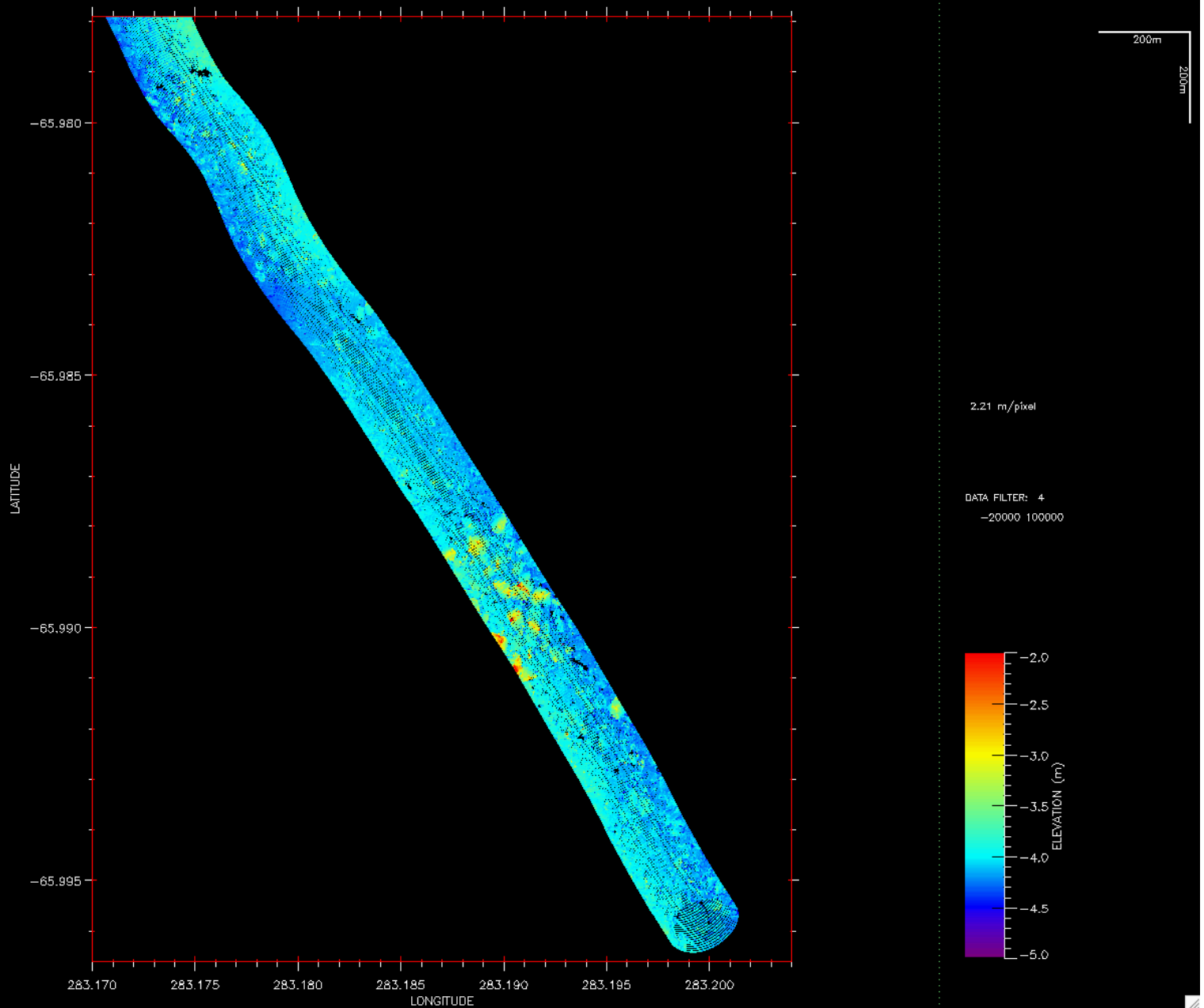
# ATM and GLAS maps (detail of elevation) (GLAS footprint size is not to scale)



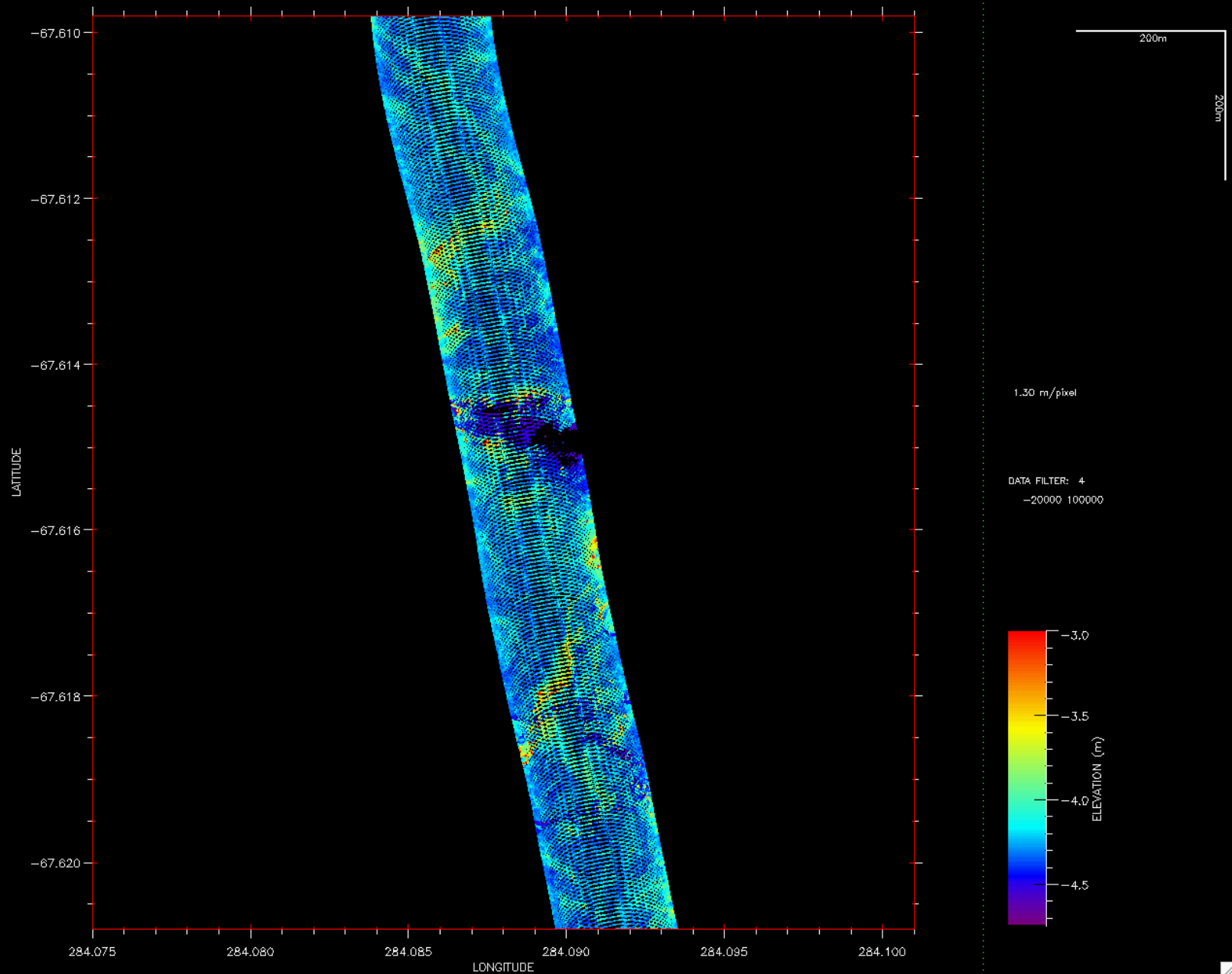
# ATM and GLAS maps



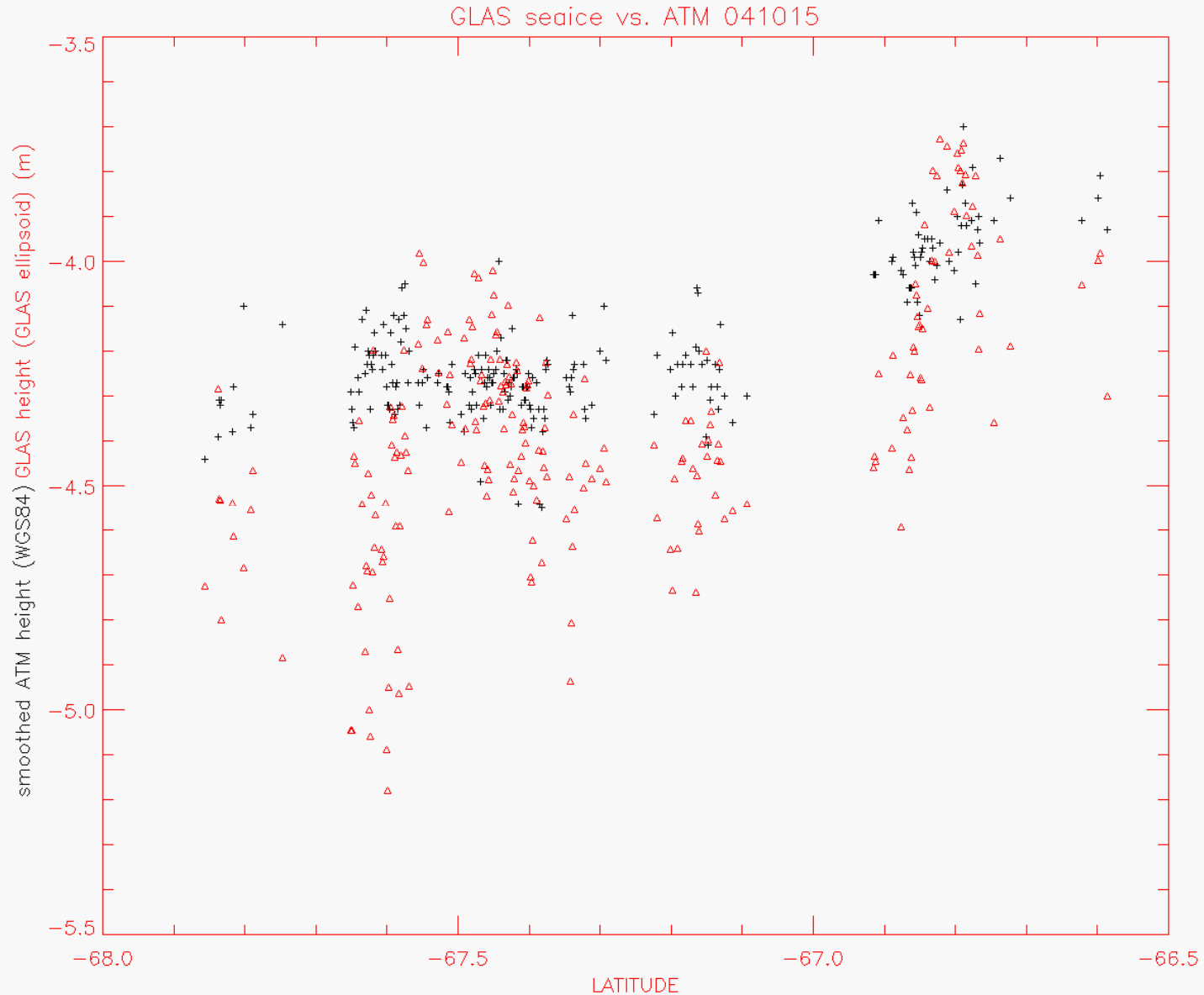
# ATM elevation map



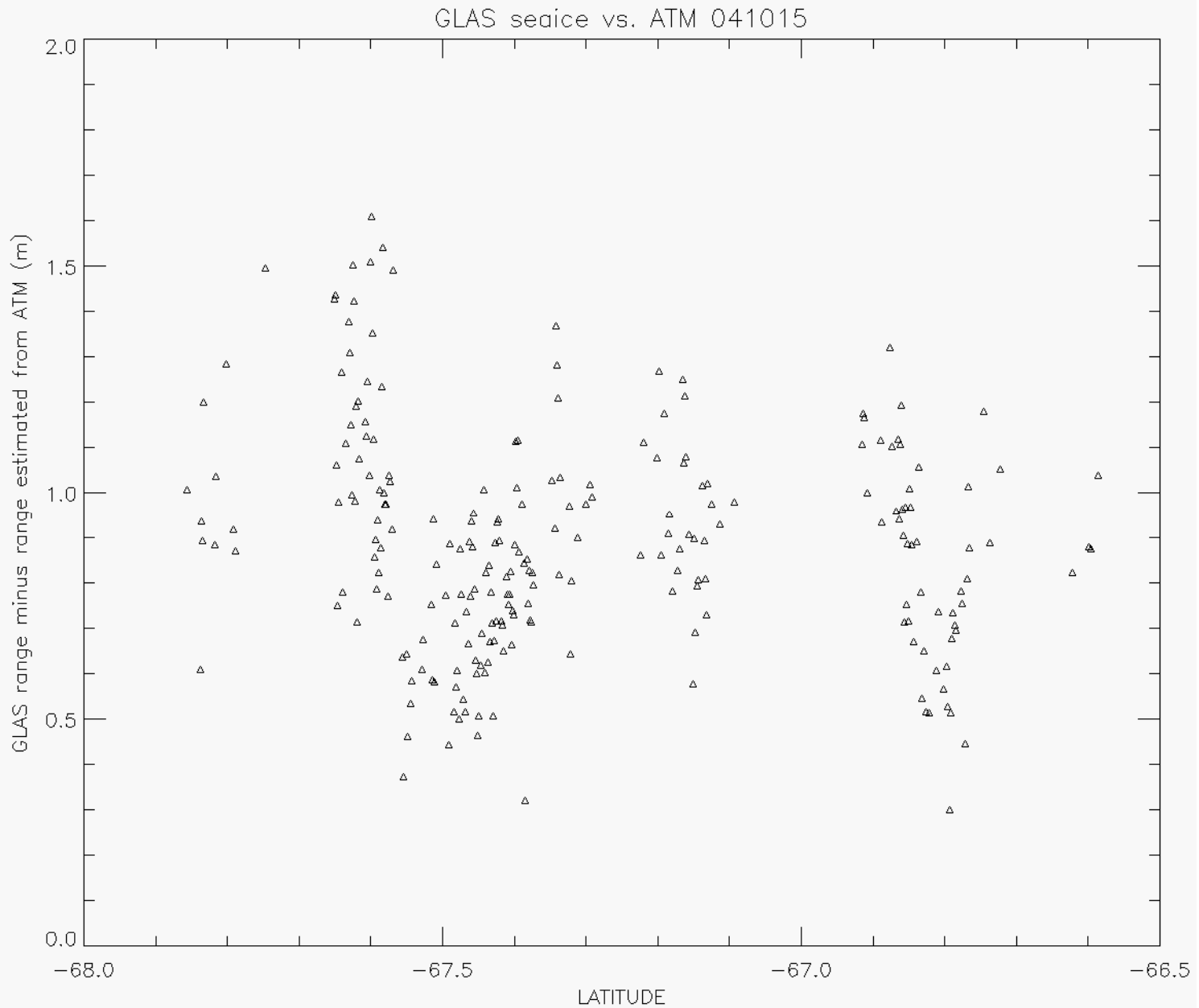
# ATM elevation detail



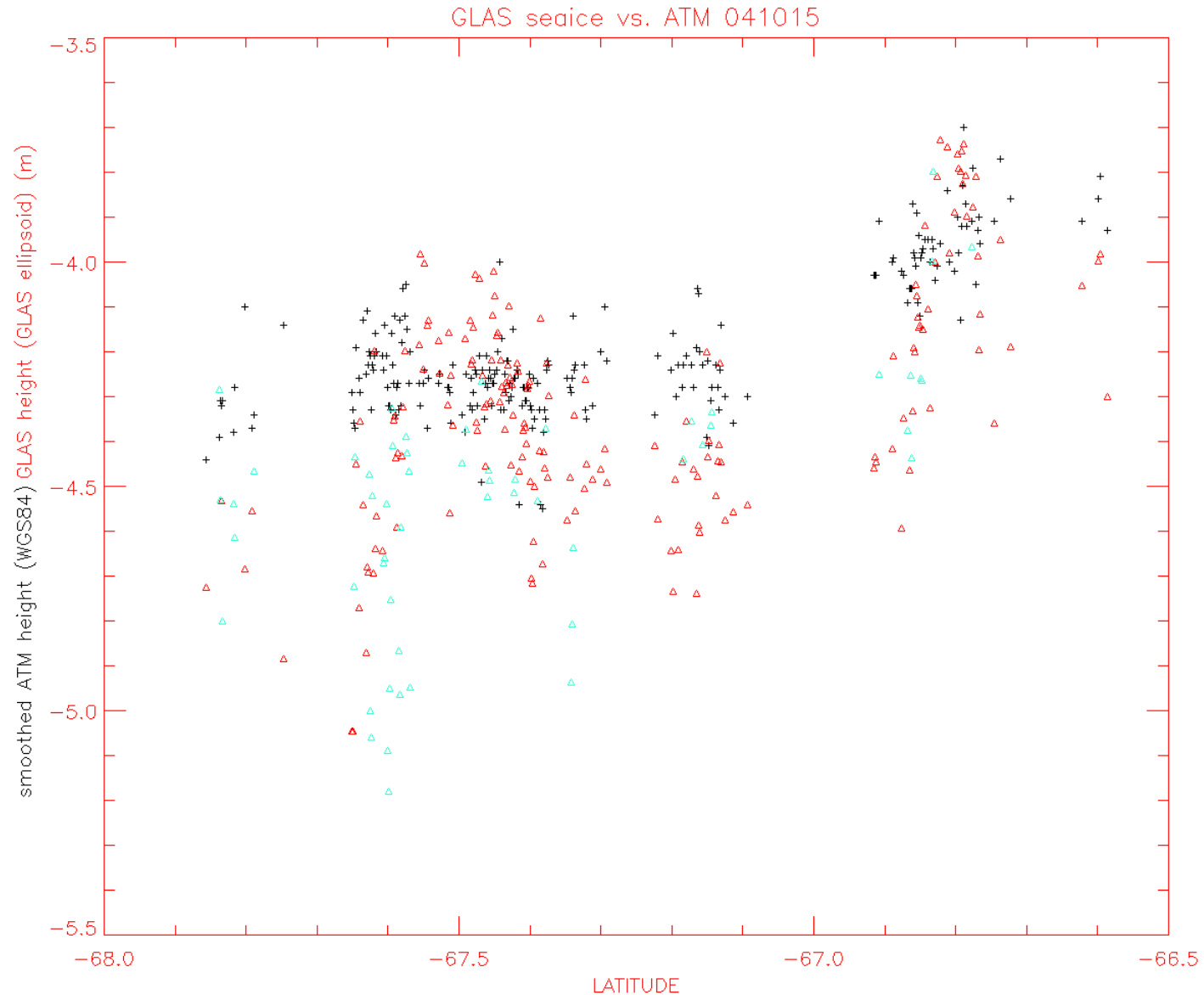
# GLAS - ATM comparison of elevation (GLAS processing Release 18)



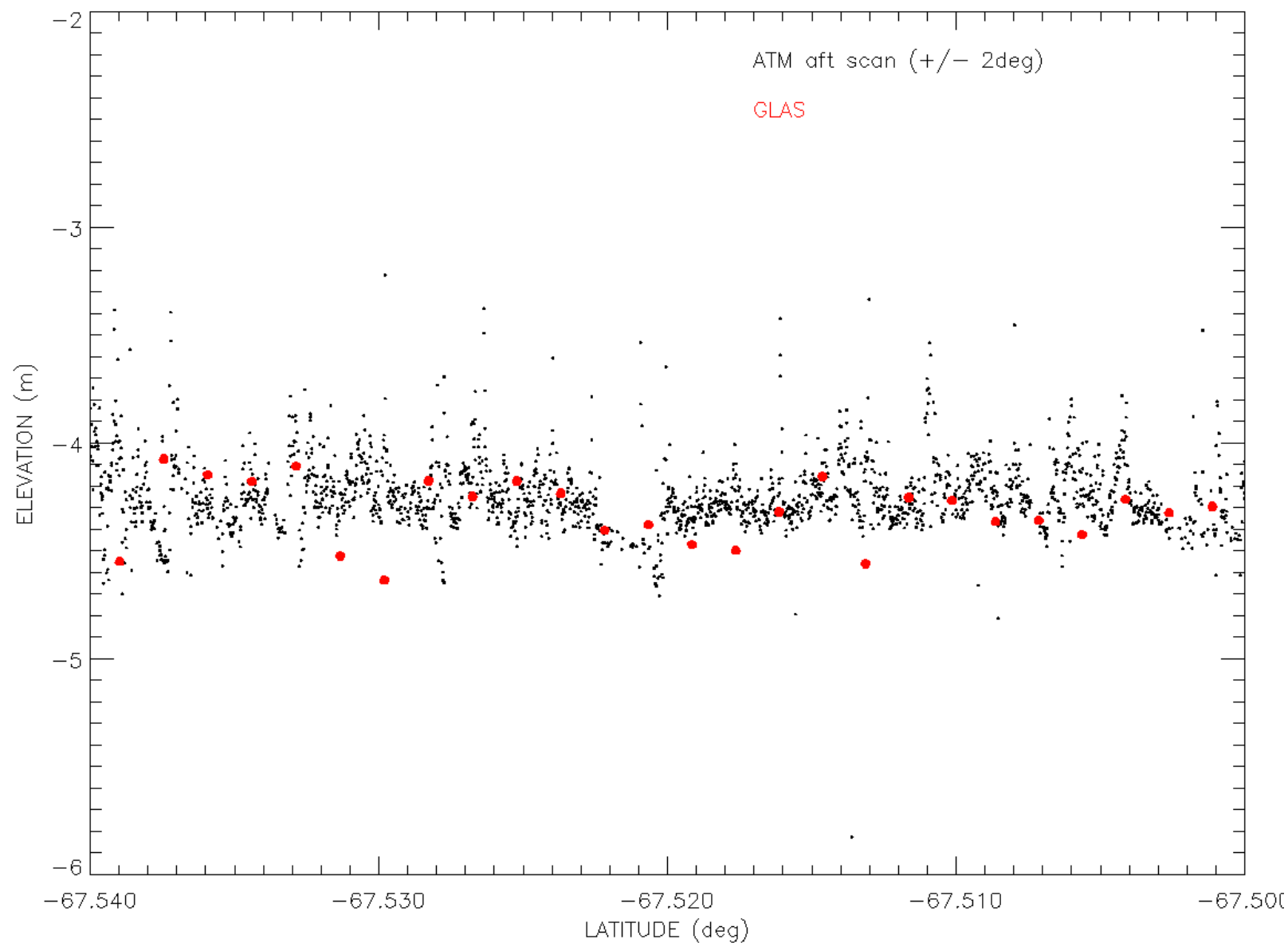
# GLAS - ATM comparison of GLAS range



# GLAS -ATM comparison of elevation segregated by GLAS parameter (“gaussian fit”<40)



# Elevation profiles: GLAS & ATM aft scan



# Plans

- Resolve ATM range bias from ground test
- Refine ATM instrument parameters (esp. alpha) and reprocess laser data
- Distribute GPS/INS data from other mission days
- Re-compare reprocessed ATM and newly revised GLAS (Release 19) data
- Other items resulting from today's workshop